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EXAMINER

WALDBAUM, SAMUEL A

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1792

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/709,575
Filing Date: May 14, 2004
Appellant(s): MANFREDI, PAUL A.

Pamela M. Riley, Reg. No. 40,146
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 5, 2008 appealing from the Office action mailed July 15, 2008.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5868843	Yang et al	2-1999
5614071	Mahvan et al	3-1997

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 21 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The application does not support that the disposable liner is both perforated and finned based on applicant's specification and figures.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1, 2, 4-7, 8, 11-14, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (US Patent 5,868,843 known hereafter as '843) and further in view of Mahvan et al. (Us Patent 5,614,071 known hereafter as '071).

Claims 1 and 8

'843 teaches a holder (21) for holding a rotating a semiconductor substrate (22) within a shield (27) where the surface of said shield is semi-permeable (31), and a dispenser (24) to dispense solvent (cleaning fluid) on said substrate (12) (col. 2 lines 40-67). It is inherent that when the dispenser dispenses a fluid on said substrate the fluid and foreign matter particles are ejected from said substrate towards said shield ('843, col. 2 lines 18-22). Additionally '843 teaches that the semi-permeable material prevents fluid ejected from the surface of the rotating substrate from forming into a mist and being re-deposited back on said substrate (col. 3 lines 1-8). '843 does teach the surface of said shield facing said semiconductor wafer comprises semi-permeable material (or sponge) having absorptive fins (projections or corrugations) (col. 2 lines 63-65). The sponge will inherently collect said fluid and prevents splashing by trapping the particles (col. 3 lines 1-10) '843 does not teach that the shield surrounds the substrate. '843 teaches a vertically orientated fin ('843 col. 2 lines 63-65) as previously discussed. One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have been obvious to one of ordinary skill in the art. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In*

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re Hutchison, 69 USPQ 138. At the time of the invention one of ordinary skill in the art would have known that the fluid dispensed on said substrate would splash and bounce back onto the substrate ('843 col. 2 lines 18-22) and the particles that bounce back are undesirable. '071 teaches shields (Fig. 1 items 26, 28, 30) that surrounds the substrate in order to capture sputtered material and prevent it from being deposited on the substrate (col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the shape of the shield (which completely surrounds the substrate) as taught by '071, in the shield of '843, since a shield which completely surrounds the substrate captures extra material and prevents it from re-depositing on the substrate. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 2 and 11

'843 and '071 teaches the apparatus according to Claim 1, and additionally '843 teaches said semi permeable material to have perforations (dents or depressions) facing said substrate (col. 2 lines 63-65, Fig. 3). '843 further teaches a sponge as the semi permeable membrane which inherently has perforations.

Claim 4

'843 and '071 teaches the apparatus according to Claim 1, and additionally '843 teaches said semi permeable material to have fins (projections or corrugations) (31, Fig. 3, col. 2 lines 63-65, Fig. 4 an overhead view of the apparatus, item 31). One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have

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been obvious to one of ordinary skill in the art. It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 5 and 12

‘843 and ‘017 teaches the apparatus according to Claim 1. Additionally it teaches that the semi-permeable material can be removed from said shield (col. 3 lines 35-39). It does not explicitly teach that the material is disposable, but it does teach that the semi-permeable material can be removed for maintenance when desired (col. 3 lines 37-39) because the semi-permeable material is capable of being removed it is disposable because it can be throw away. Additionally ‘843 teaches the semi-permeable material can be removed; therefore, it is able to be replaced if desired. It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claims 6 and 13

‘843 and ‘071 teaches the apparatus according to Claim 1 where the semi-permeable material is a required to prevent the liquid material from forming a mist and re-depositing the mist on the wafer (col. 2 lines 18-22). ‘843 teaches that the semi-permeable material is attached to the mounting plate and stays in place during use. The material is permanently attached so as not to be removed until the equipment is down for maintenance and therefore not a temporary structure which is replaced after a single use or during use of the equipment.

Claim 7 and 14

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'843 and '071 teaches the apparatus according to Claim 1 where the semi-permeable material is a sponge. This apparatus rotates and dispenses a fluid on said substrate the excess fluid will be flung onto the sponge. It is inherent that the sponge will collect said fluid. The fluid will then begin to drain down said semi-permeable material due to gravity.

6. Claims 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over '843, and further in view of '071 and as evidenced by Dictionary.com.

Claim 21

'843 teaches a holder (21) for holding a rotating a semiconductor substrate (22), a shield for the substrate (27) where the surface of said shield is semi-permeable (31), and a dispenser (24) to dispense solvent (cleaning fluid) on said substrate (12) (col. 2 lines 40-67). It is inherent that when the dispenser dispenses a fluid on said substrate the fluid and foreign matter particles are ejected from said substrate towards said shield ('843, col. 2 lines 18-22). Additionally '843 teaches that the semi-permeable material prevents fluid ejected from the surface of the rotating substrate from forming into a mist and being re-deposited back on said substrate (col. 3 lines 1-8). Additionally '843 teaches said semi-permeable material made of a sponge material (a protective covering that serves to conceal and is perforated where perforated is defined as pierced with a hole or holes as evidenced by Dictionary.com) and faces said substrate (col. 2 lines 63-65, Fig. 3). '843 does teach the surface of said shield facing said semiconductor wafer comprises semi-permeable material (or sponge) having absorptive fins (projections or corrugations) (col. 2 lines 63-65). The sponge will inherently collect said fluid and prevents splashing by trapping the particles (col. 3 lines 1-10). '843 does not teach that the shield surrounds the substrate. '843 teaches a vertically orientated fin ('843 col. 2 lines 63-65) as

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previously discussed. One of ordinary skill in the art knows that a fin (or baffle) and a sponge inherently controls fluid flow. Using the known technique of controlling fluid and air flow with the absorptive fins (or baffles) as taught by '843 would have been obvious to one of ordinary skill in the art. It does not explicitly teach that the material is disposable, but it does teach that the semi-permeable material can be removed for maintenance when desired (col. 3 lines 37-39) because the semi-permeable material is capable of being removed it is disposable because it can be throw away. Additionally '843 teaches the semi-permeable material can be removed; therefore, it is able to be replaced if desired. '843 does not teach that the shield surrounds the substrate. At the time of the invention one of ordinary skill in the art would have known that the fluid dispensed on said substrate would splash and bounce back onto the substrate ('843 col. 2 lines 18-22) and the particles that bounce back are undesirable. '071 teaches shields (Fig. 1 items 26, 28, 30) that surrounds the substrate in order to capture sputtered material and prevent it from being deposited on the substrate (col. 1 lines 60-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the shape of the shield (which completely surrounds the substrate) as taught by '071, in the shield of '843, since a shield which completely surrounds the substrate captures extra material and prevents it from re-depositing on the substrate. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Claim 26

'843 and '071 teaches the apparatus according to Claim 21 where the semi-permeable material is a sponge. This apparatus rotates and dispenses a fluid on said substrate the excess fluid will be

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flung onto the sponge. It is inherent that the sponge will collect said fluid. The fluid will then begin to drain down said semi-permeable material due to gravity. It has been held that the recitation that an element is “adapted to” perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

(10) Response to Argument

1. Argument with regard to 112:
2. Applicant is arguing that the claimed subject matter in claims 21 and 26 is supported by the specification in paragraph 17 thus does not constitute new matter. This paragraph discloses the different embodiments separately as an individual embodiment of the invention. Paragraph 17 does not disclose that the two individual embodiments are combined to create a third embodiment, thus claims 21 and 26 contains new matter.
3. Arguments with regard to 103:
4. For claims 8, 11-14, 21 and 26:
5. The applicant is arguing that the prior art does not teach fins on the shield member and that the corrugations taught by the prior art does not constitutes fins. Applicant points out on page 15 of the appeal brief in the last paragraph, that the fin is a vane and that the vane has sometimes curved surfaces radially mounted along an axis. Figure 3 of the prior art (5,868,843) shows the corrugations, which are curved surface radially mounted along an axis thus the corrugations are fins.
6. Applicant is further arguing that the Mahvan reference is non-analogous art since it is a for a sputtering process. Mahvan is substrate processing apparatus, with a shield that surrounds

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the processing area to prevent the escape of processing fluids from the processing area. This reference was used to show that it is within the skill level of one of ordinary skill in the art that a shield for a processing area can surround the entire processing area. Thus it is obvious to one of ordinary skill in the art at the time the invention was made to have the shield of the primary reference surround the entire processing area, since Mahvan teaches that a shield can surround the entire processing area.

7. Arguments for claims 21 and 26:

8. See response to arguments in the above section.

9. Applicant also argues that the art does not teach that the shield has perforated surface. Yang teaches that the fin shield is made up of a sponge material. A sponge is open cellular material, thus allowing it to absorb fluids and impacts. Since the sponge is open cellular, hence porous, therefore the shield is inherently perforated from the sponge material used for the shield.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Samuel A Waldbaum/

Examiner, Art Unit 1792

Conferees:

/Michael Cleveland/

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Supervisory Patent Examiner, Art Unit 1792

/Jennifer Michener/

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